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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/667,746 | 09/22/2003 | Michael J. Stevenson | STEV-110C | 1895 |

7590 04/01/2005
Robert E. Strauss
74478 Highway 111
Box 318
Palm Desert, CA 92260

| EXAMINER | |
|------------------------|--------------|
| PARKER, FREDERICK JOHN | |
| ART UNIT | PAPER NUMBER |
| 1762 | |

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,746

Applicant(s)

STEVENSON ET AL.

Examiner

Frederick J. Parker

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because on line 3 a comma should be placed between polyethylene and by. Correction is required. See MPEP § 608.01(b).
2. The disclosure is objected to because of the following informalities: 1) page 1, the status of 09/909066 should be updated. 2) page 2, line 27, "iwever" is unclear and further the sentence appears incomplete. 3) last line, the extra period should be deleted. Appropriate correction is required.

Claim Objections

3. Claims 1,11 are objected to because of the following informalities: Claim 1: line 1, "The" should be "A", and "the" before surface should be "a". Claim 11: after "11", one period should be removed. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-4,6,9,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenett US 2628172 in view of Hoopman et al US 5681217.

Jenett teaches printing designs, decoration, protective surfaces, etc to a polyethylene (an elastomer) surface (per claim 2) by coating the surface with a dispersion of fine polyethylene particles (per claim 3), an organic liquid medium (same as "carrier", per claim 7), and a suitable resin tackifier, after which the coated surface is heated 80-200 C (175-392 F, encompassing the range of claim 9/c) to evaporate solvent ("drying") and cause fusion/ bonding of the coating to the substrate (col. 2, 14-30; col. 4, 59-65; col. 5, 9-21). The dispersion fuses at a sufficient temperature which prevents thermal distortion of the substrate (col. 3, 51-5; col. 2, 14-20; col. 4, 56-65). Particle sizes of the polyethylene (PE) particles is 0.5-5 microns which is "less than 140 microns" per claims 4 and 10. Addition of inorganic particles is not cited.

Hoopman teaches to apply wear-resistant textured surfaces to polymeric substrates (encompassing elastomeric/ PE resins) by dispersing inorganic particles

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into a resin binder such as thermoplastic polymer materials (encompassing elastomers), col. 11, 56 to col 12, 35, and heating to cause fusion. Since Hoopman teaches forming protective/ wear-resistant layers comprising a polymer binder with inorganic particles, and Jenett explicitly teaches forming coating as protective surfaces, there would have been the suggestion to improve the protective surfaces of Jenett by incorporating the inorganic particles of Hoopman to improve the wear-resistant/ protective properties of the dispersion coatings on the polyethylene. As to claim 1 b, the inorganic particles range from 0.1-1000 microns, preferably 0.1-100 microns, which would pass through a 15 mesh (1.1 mm) mesh sieve.

As to claims 6 and 9, while the proportion of tackifier to polyethylene/ polyolefin powder and solvents are not explicitly cited, it would have been apparent from column 5 of Jenett that the amounts of components would have been determined by optimization by one of ordinary skill to provide a suitable coating dispersion.

Column 5, 33-54 of Jenett teaches the fusion temperature of the coating "up to just below the melting point of the base, e.g. about 5 C below". Thus the sole difference between the claims and combination of references is that Jenett just approaches the melting point whereas Applicants just reach the melting point, so the difference is a matter of one or a few degrees. It is well established that where the principle difference between a claimed process and the prior art is merely a temperature difference, it is incumbent upon the Applicant to establish criticality of that difference, *Ex parte Khusid* 174 USPQ 59. In the instant case the difference

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would have been expected to produce similar results since melting point of polymers such as PE is not instantaneous and that surface melting would have been expected just below a recited melting point value. Further, it is the Examiner's position that increasing temperature of the only a surface to a point to just where the surface is tacky would have been an obvious variation to provide greater adhesion of the applied inorganic particles, as is well-known in the art. Further the temperature ranges of Applicants and the prior art include temperatures at which substrates of a higher melting point would have experienced surface melting given the guidance of Jenett on col. 3, 52-56.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of Jenett by incorporating inorganic particles as disclosed by Hoopman et al to a tacky substrate to provide an improved protective coating with enhanced wear-resistance and greater particle adhesion.

1. Claims 5,7,11,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenett US 2628172 in view of Hoopman et al US 5681217 and further in view of Brant et al US 5114763.

Jenett and Hoopman et al are cited for the reasons above which are incorporated herein. Specific aliphatic hydrocarbon tackifiers are not taught. However, Brant teaches successfully forming polyethylene (elastomer) films using a "compatible tackifier" including aliphatic and cycloaliphatic hydrocarbon resins (col. 6, 5-19).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of Jenett in view of Hoopman et al by incorporating the tackifiers of Brant et al because aliphatic and cycloaliphatic hydrocarbon resins are known tackifiers for polyethylene formulations.

2. Claims 8,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenett US 2628172 in view of Hoopman et al US 5681217 and further in view of Kagota et al US 5252393.

Jenett and Hoopman et al are cited for the reasons above which are incorporated herein. Aqueous carriers are not taught.

Kagota et al teaches forming aqueous polyethylene dispersions comprising resin particles and a suitable tackifier. While the dispersions are not used for identical coatings, the reference clearly teaches that an aqueous carrier media successfully forms polyethylene-tackifier dispersions. Since one of ordinary skill would have been motivated to substitute the organic solvent carriers of the primary reference with water to overcome health, regulatory, and flammability problems associated with organic hydrocarbon solvents, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of Jenett in view of Hoopman et al by incorporating the aqueous carrier of Kagota et al for the hydrocarbon carrier of the dispersion to overcome the health, regulatory, and flammability problems associated with organic hydrocarbon solvents.

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7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6569494 illustrates the state of the art concept of heating polymeric surfaces to form tacky surfaces onto which inorganic particles are applied to securely fix the particles (col. 9, top).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am - 3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meeks Timothy can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

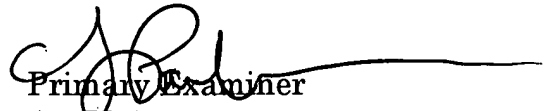
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frederick J. Parker

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Primary Examiner
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fjp